

A Research in Degrees of Affnity among Entertainment Programmes

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A Research in Degrees of Affinity among Entertainment Programmes

By

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This research was conducted by the Broadcasting Corporation of Japan in June 1938 on a nation-wide scale, and Mr. Hideo Tanaka, a graduate of the Tōhoku Imperial University, and at that time one of the staff of the Research Department of the Broadcasting Corporation of Japan, was appointed to take charge of this research.

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I. Purpose of the Research

No broadcast listeners like all entertainment items equally well. There is an order in their liking. I should like to name this order “the order of taste” of listeners for entertainment items. If, for instance, a listener has a liking for ten entertainment items in the following order :

(1) Naniwabusi recitation (a kind of story telling with intonation) (2) Kōdan (a kind of classical story telling), (2) Rakugo (a kind of comic story telling) . . . (9) Kiyomoto (a kind of classical Japanese music), (10) Tokiwazu (a kind of classical Japanese music) . . . then this order is called the “order of taste” of this listener for entertainment items. If we consider relations among entertainment items according to this “order of taste”, we shall notice many differences in their affinity. In the case of the aforesaid listener, we can judge from his order of taste that Naniwabusi recitation is in the closest association with Kōdan (a kind of classical story telling) and next with Rakugo (a kind of comic story telling). We call this relation “the affinity between entertainment items” from the viewpoint of the listeners’ inclinations.

If we investigate the order of taste of many listeners and the degrees of affinity among the items, we can judge the mutual relations of affinity among entertainment items (Cf. II, B, 4) which will be applicable to all cases and not limited to the case of a specified listener.

Following relations of affinity in this way, we find some groups of items which have comparatively close relations of affinity to each other, and we can easily divide all items of entertainment into several groups, as viewed from the point of the listeners’ inclinations.

If we can make clear in this way the relations of affinity

among entertainment items and the classification of items based on them, they will serve the purpose of rationalizing the arrangement and combination of entertainment items in broadcast programmes. By this means, we can also standardize the allotment of the fundamental number of broadcasts for each item of entertainment. The object of this research, as mentioned above, is to ascertain relations of affinity among entertainment items and the classification of items based on them.

II. Methods and the Result of the Research

A. The Research Form and its Distribution

We employed the questionnaire method in observing the order of taste of listeners for entertainment items. For this purpose, we distributed to the listeners a research form — an official postcard on which were printed the following question items.

A Request

Among the following items of entertainment, put a mark (1) on your favourite item, and a mark (2) on your second choice, and mark in this way up to (10). In the column of “Man, Woman” cross out the wrong sex.

Occupation.	Age.	Man, Woman.
Item.	Mark.	
Gidayū (a ballad drama)		
Tokiwazu (a kind of classical Japanese music)		
Kiyomoto (ditto)		
Sinnai (ditto)		
Nagauta (ditto)		
Utazawa (ditto)		
Kouta (a ditty)		

Hauta (a little song)
 Zokkyoku (a popular song of old days)
 Kokyoku (classical music)
 Gagaku (court music)
 Yōkyoku (“Nō” music)
 Sōkyoku (Koto music . . . Japanese 13-stringed horizontal harp music)
 Samisen (Samisen music . . . a three-stringed Japanese guitar music)
 Syakuhati (bamboo-flute music)
 Biwa (a kind of lute)
 Sigin (recitation of Chinese poems)
 Riyō, Min-yō (folk-songs)
 Sin Nippon ongaku (new Japanese music)
 Kayōkyoku (popular songs)
 Kokumin Kayō (people’s song)
 Gunka (marching songs)
 Kokumin Sikyoku (orchestration of folk-songs)
 Wayō-gassō (concerts of Japanese and western instruments)
 Kangengaku (orchestral music)
 Situnaigaku (chamber music)
 Suisōgaku (music by wind instruments)
 Kigaku Dokusō (recitals of instrumental music)
 Piano,
 Organ,
 Violin, Cello,
 Flute, Clarinet,
 Percussion instruments, Xylophone and others.
 Kageki (opera)
 Gassyō (chorus)
 Dokusyō (vocal solos)
 Kei-ongaku (light music)
 Mandolin,
 Guitar,
 Accordion,
 Harmonica,
 Jazz

Radio drama.

Hōsōbutaigeki (stage drama for broadcasting)

Butai tyūkei (a relay broadcast from a theatre)

“Nō”

Kyōgen (a kind of farce)

Revue

Syōzyo kageki (girls' opera)

Eigageki (a photoplay)

Radio scene, Radio sketch.

Radio variety.

Naniwabusi (a kind of story-telling with intonation)

Kōdan (classical story-telling)

Rakugo (comic story-telling)

Ninzyōbanasi (a kind of story telling based on happenings
in the world)

Mandan (a radio chat)

Modan Kobanasi (modernized comic story-telling)

Manzai (comic story-telling in dialogue form)

Kowairo (inpersonations of stage actors)

Monomane (mimicry)

Yose-tyūkei (a relay broadcast from Yose — a kind of
vaudeville)

News-engei (entertaining performances based on recent
happenings in the world)

Radio novels.

Monogatari (a radio story)

Meisaku rōdoku (recitation of literary masterpieces)

Siika Rōei (recitation of Japanese poems)

Record music.

Talkie music.

The number of research forms distributed among the listeners amounted to 10,000. The Broadcasting Corporation of Japan allotted eleven sheets of the research form to each of its subscription-fee collectors, and they distributed them to eleven listeners at the ratio of one every day, as they went round for fee-collection for eleven days. The number of the answers

sent back to the Corporation reached 3,597, giving a collection ratio of 36 %. The number of the answers, however, is limited to those which reached the Corporation during the period extending from the tenth of June to the 12th of July and does not include those which came after this period.

B. Arrangement and Calculation of the Answers, and the Result

1. "Inclination marks", the table of "inclination marks" and how to read it

As is clearly shown in the research form, I established ten grades, classifying listeners' inclinations from the first to the tenth. And in each answer, I gave ten marks to the item which ranked first, nine marks to the item which ranked second . . . two marks to the item which ranked ninth, one mark to the item which ranked tenth. In the case of the listener whom I took as an example before, Naniwabusi recitation scores ten, Kōdan (classical story telling) scores 9, Rakugo (comic story telling) scores 8 . . . Kiyomoto scores 2, Tokiwazu scores 1.

After giving marks to all the answers in this way, I picked out for each item only those answers in which the item referred to ranked first in the order of taste. For example, I picked out in the first place those answers which ranked *Gidayū* (a ballad drama) first, then I picked out only those answers which ranked *Tokiwazu* (a kind of classical Japanese music) first. In this way, all the answers were distributed among sixty items. (As we could not find any answer ranking the item of flute and clarinet first, no answer was assigned to this item). In each group of answers which was formed by this process of distribution, there always exists a certain item which ranks first and obtains 10 marks from each answer of that group. We name this item "the fundamental item" for the sake of convenience

of explanation. For instance, there 154 answers assigned to the item of Gidayū (a ballad drama), and from all of these answers Gidayū received 10 marks and scores 1,540 marks in all. In this case, Gidayū is the fundamental item. All the remaining items, except for the fundamental item, acquire 9 to 1 marks respectively from the different answers in this group. For instance, when Gidayū is the fundamental item, Tokiwazu acquires nine marks each from 18 sheets among 154 answers, eight marks each from 6 sheets, seven marks each from 3 sheets, six marks each from 3 sheets, two marks each from 2 sheets, thus obtaining a total of 296 marks from 43 sheets. We classify these marks of the fundamental item and other items calculated in this way under the name of "inclination marks."

Thus we calculated the inclination marks of the fundamental item and the other 59 items in sixty different cases. In each of them a different item was made the fundamental item, we then arranged them all in the "table of inclination marks (Table 1)." From this table, you will understand the following facts — how the listeners who answered that they liked such and such an item most favoured other items, and what sort of affinity exists between the most preferred item and each of the other items, — and you will be able to trace these relations through the inclination marks, whichever item you may choose as the fundamental item.

I will explain how to read this table by a concrete example. The items printed at the top are the fundamental items and those printed on the left-hand side are all other items. For instance, as there are 305 listeners who answered that they like Kayōkyoku (popular songs) most, inclination marks of the fundamental item (Kayōkyoku, in this case) score 3,050, and you will find these marks at the point where the vertical column of Kayōkyoku among the fundamental items crosses the horizontal column of Kayōkyoku among the items on the left-hand side. In this case when Kayōkyoku is the fundamental item, radio drama acquires 468 marks as its inclination score and these marks will be found where the above-mentioned vertical column crosses the horizontal column of radio drama among

Table 2 Comparison of the

Order	Item	Sum total of inclination marks	permil- lage
1	Naniwabusi (A kind of story telling with intonation)	21833	111.0
2	Manzai (A comic story-telling in dialogue form)	13411	98.2
3	Rakugo (A comic story telling)	12538	63.8
4	Kōdan (A classical story telling)	12194	62.0
5	Kayōkyoku (A popular song)	11693	59.5
6	Yose-tyūkei (A relay broadcast from Yose . . . a kind of vaudeville)	9871	50.2
7	Gunka (A marching song)	5671	28.8
8	Radio drama	5574	28.3
9	News-engei (Entertaining performances based in recent happenings in the world)	4912	25.0
10	Eigageki (A photoplay)	4906	24.9
11	Mandan (A radio chat)	4687	23.8
12	Modan Kobanasi (A modernized comic story telling)	4617	23.5
13	Butai tyūkei (A relay broadcast from a theatre)	4454	22.7
14	Gidayū (A ballad drama)	4401	22.4
15	Kokumin Kayō (A people's song)	3972	20.2
16	Biwa (A kind of lute)	3871	19.7
17	Sigin (Recitation of Chinese poems)	3720	18.9
18	Hōsōbutaigeki (Stage drama for broadcasting)	3518	17.9
19	Nagauta (A kind of classical Japanese music)	3480	17.7
	Wayō-gassō (A concert of Japanese and Western musical instruments)		
20	Kangengaku (An orchestra)	2699	13.7
21	Record music	2649	13.5
22	Syakuhati (A bamboo-flute)	2584	13.1
23	Radio scene, Radio sketch	2433	12.4
24	Hauta (A little song)	2424	12.3
25	Zokkyoku (A popular song of old days)	2342	11.9
26	Mandoline, Guitar	2325	11.8
27	Accordion	2229	11.3
28	Monogatari (A radio story)	2209	11.2
29	Meisaku rōdoku (Recitation of literary masterpieces)	2205	11.2
30	Kouta (A ditty)	2183	11.1
31	Ninzyōbanasi (A kind of story telling)	2086	10.6
	Radio novels		
32	Riyō, Min-yō (A folk-song)		
33	Sinnai (A kind of classical Japanese drama)	1809	9.2
34	Violin, cello	1790	9.1
35	Sōkyoku (A Koto)	1751	8.9
36	Samisen (A samisen)		
37	Kowairo (Impersonations of stage actors)	1637	8.3
38	Monomane (A mimicry)	1623	8.3
39	Yōkyoku (A "Nō" music)	1531	7.8
40	Sin Nippon ongaku (New Japanese music)	1474	7.5
41	Suisōgaku (Music by Wind instruments)	1333	6.8
	Dokusyō (Vocal solo)	1289	6.6
	Jazz	1262	6.4
	Kiyomoto (A kind of classical Japanese music)		

popularity of each items

Order	Item	Sum total of inclination marks	permil- lage
42	Tokiwazu (ditto)	1202	6.1
43	Syōzyo Kageki (Girl's opera)	1178	6.0
44	Piano	1143	5.8
45	Harmonica	1119	5.7
46	Situnaigaku (A chamber music)	1113	5.7
47	Radio variety	1008	5.1
48	Kageki (Opera)	867	4.4
49	Talkie music	776	3.9
50	Siika Rōei (Recitation of Japanese poems)	685	3.5
51	Gassyō (Chorus)	641	3.3
52	Utazawa (A kind of classical Japanese music)	630	3.2
53	Revue	576	2.9
54	“Nō”, Kyōgen (A kind of farce)	570	2.9
55	Percussion instruments (Xylophone and others)	533	2.7
56	Kokumin Sikyoku (Orchestration of folk-song)	409	2.1
57	Flute, clarinet	368	1.9
58	Organ	286	1.5
59	Gagaku (A court music)	243	1.2
60	Kokyoku (A classical music)	116	0.6
Grand total		196653	1000.0

the left-hand items. The mark (—) in this table in the place of inclination marks denotes that there is no inclination mark to be recorded in that column.

2. Comparison of popularity of entertainment items

In the table of inclination marks, you will notice on the right side a column named “the total of inclination marks”. This is the sum total of inclination marks obtained by each item when the item itself is made the fundamental item and in all other cases when the respective item in turn is made the fundamental item. To speak more concretely, this is the sum total of inclination marks filled up in the horizontal column, and it shows the sum total of inclination marks obtained by one item from all the answers. It can safely be said that this sum total shows the degree of inclination with which one item

is heard by the listeners who answered the questions, that is to say, the popularity of that item in the form of inclination marks. For instance, the sum total of inclination marks of “Nō” and “Kyōgen” (a kind of farce) is 570 marks, and this is obtained by adding 80 marks which were scored when this item was made the fundamental item, to 490 marks which were scored when some other item was made the fundamental item. This is the sum total of inclination marks which “Noh” and “Kyōgen” acquired from all the answers and, therefore, shows the relative popularity of these items.

Nevertheless, you cannot judge the popularity of one item from the sum total of inclination marks, if you limit your observation to the single case of that item. It will be made clear only when you compare the sum total of inclination marks of that item with those of other items. In order to simplify this comparison, I reduced the sum total of inclination marks of every item into permillage. I arranged every item in the order of popularity and showed the sum total of inclination marks and its permillage in the table (Table 2). In this table you can easily compare the popularity of each item.

3. “Degree of affinity”, the table of “degrees of affinity” and how to read it

As the next step, I estimated the ratio of inclination marks of all other items to that of the fundamental item which is fixed at 100. I worked out the percentage of inclination marks of every item to that of the fundamental item on all occasions. As this percentage shows the degree of affinity existing between the fundamental item and each of the other items, we call it the “degree of affinity”. In the table (Table 3), you will see the degrees of affinity arranged in the form of a table. This table, therefore, is nothing but a transformation of inclination marks into percentage, assuming that the inclination marks of the fundamental items are always 100. As all the inclination marks of fundamental items are indiscriminately fixed at 100, the degrees of affinity of the fundamental item to other items

are shown on the same standard, whichever item you may choose as the fundamental item. Now you will find in this table some columns in which the degrees of affinity are shown as zero. This does not mean that there exists no degree of affinity. In making the percentage of inclination marks as mentioned above, I counted anything between 0.5 and 1.0 as 1.0 disregarding anything below 0.5. In this way those marks under 0.5 were moved down to zero. This being the case, zero means that the degree of affinity is less than 0.5. It is the mark (—) in the table that shows there exists no degree of affinity.

As to the figures in bold-type I will explain their meaning later on in the paragraph on “the diagram of relations of affinity and how to read it”.

In studying this table, you are requested to read it in the same way as the table of inclination marks except for the case of “zero” which is explained above. For instance, the degree of affinity of Kōdan (a classical story-telling) to Rakugo (a comic story-telling) is 51° when the former is made the fundamental item, and this will be found where the vertical column of Kōdan crosses the horizontal column of Rakugo.

On the other hand, the degree of affinity of Kōdan to “radio chat” is 21° , and this will be found where the same vertical column crosses the horizontal column of “radio chat”. From this fact, you will understand that the degree of affinity of Kōdan to Rakugo is nearly twice as high as that of Kōdan to “radio chat”.

4. “The relation of affinity”

To observe the relation of affinity between two items, A and B, it is not enough to inquire into the degrees of affinity between the two items from one direction, namely from A to B. At the same time it is necessary to investigate the degrees of affinity in the opposite direction, namely from B to A. It is always necessary to observe them from both angles. I have called this dual affinity “the relation of affinity”.

It is clear from this fact that there are many kinds of relative affinity which are composed of various combinations of the two kinds of affinity, and various differences in the density of relations are brought about by these combinations.

For instance, “the relation of affinity” between “Naniwabusi” recitation and Kōdan is observed by combining the two kinds of affinity, namely 48° (from Naniwabushi to Kōdan) and 68° (from Kōdan to Naniwabushi). This belongs to the most intense of all relations of affinity. While “the relation of affinity” between Sinnai and chorus may be cited as one of the thinnest, because the degrees of affinity are zero on both sides. And between these extremes, the most intense and the thinnest, there exist many relations of affinity varying in density.

5. The diagram of “relations of affinity” and how to read it

The Figure 1 is a diagram illustrating the popularity of items and the mutual relations of affinity among entertainment items as stated above. In this diagram, the popularity of each item is shown by the size of the circle which encircles its name, while the relation of affinity between two items is shown by the distance from one circle to the other, as well as the thickness of the line joining the two circles. According to this diagram, you have an outline of the popularity of every item, relations of affinity among entertainment items, and the classification of items based on relations of affinity. In observing this diagram, you are requested to take into consideration the following conditions in drawing.

(i) The popularity of items

The size of the circle enclosing the name of an item shows the popularity of that item, as mentioned in paragraph II, B, 2. The most exact way to show this popularity by a circle is to extract the square root of the total of inclination marks of that item, and to determine the length of the semi-diameter

of the circle in proportion to the square root. But this method is attended by various difficulties, as the size of each circle must vary according to the square root, and too much difference in the size will be an obstacle to the drawing as well as to observation. This is the reason why I did not use this method. I established five grades in the size of the circles, and each time the grade goes down, the size of the circle becomes smaller and smaller. The boundary of each grade is fixed at the spot where the difference of the total of inclination marks is comparatively great in the above-mentioned table of "comparison of popularity". Those items from the first to the sixth in the order of popularity are included in the first grade, those from the seventh to the 19th in the second grade, those from the 20th to the 31st in the third grade, those from the 32nd to the 47th in the fourth grade, and the remaining items under the 48th are included in the fifth grade. (This boundary is made clear by a line in the table of the comparison of popularity).

(ii) The relation of affinity between items

The relation of affinity between two items is shown by the mutual position of the two circles and the line joining the two circles. That is, a short distance between the circles shows an intimate relation, and a thick line joining the circles denotes close relationship.

The disposition of each circle — that is, whether or not they are jointed by lines — is so devised that the relation of affinity between each pair of items will be reflected as clearly as possible. In spite of this effort, the distance between circles does not always coincide with the intimacy of the relation, as the diagram was originally drawn as a plane diagram.

The lines joining circles are used to denote the relation between those items which are in comparatively close relationship to each other. And the thickness of the lines, according to the intimacy of the relationship, is divided into five grades. That is, for the convenience of drawing, I omitted the lines between circles whose degrees of affinity on both sides are under

15°. (In the table of the degrees of affinity, only the degrees of affinity above 15° are shown by the figures in bold type). Then I divided the degrees of affinity above 15° into the following three classes. That is, above 43° A, from 42° to 27° B, from 26° to 15° C. As the next step, I divided the thickness of the above-mentioned lines into the following five grades, according to the nature of the combinations of the two kinds of "degrees of affinity".

The first grade the combination of A and A.

The second grade the combination of A and B.

The third grade the combination of A and C & B and B.

The fourth grade the combination of B and C.

The fifth grade the combination of C and C.

In the diagram, the thickest line shows the first grade, the line next to it in thickness shows the second grade — the thinnest line shows the fifth grade. The exact density of the relation belonging to each grade is shown in the table of the degrees of affinity, in which you will also see the relation of affinity under the fifth grade.

6. Classification of entertainment items

In observing the diagram of relations of affinity, you will also find the classification of entertainment items based on relations of affinity. I will give you only the outline of the classification, leaving the details to the diagram.

First of all there is a group of entertainments setting up Naniwabusi recitation as the centre, and the centre is encircled by Kōdan, Rakugo, relay broadcast from Yose and Manzai, and these four items are of themselves surrounded by a group of entertainments such as Ninzyōbanasi, Kowairo (mimicry), news entertainments and radio chat.

There are three other groups which are connected with this group. One of them is a group of newly-created radio

arts which has radio drama as the focus and includes radio sketch, radio-novel, radio variety, radio story, recitation of literary masterpieces, recitation of Japanese poems, etc.

The next is group I of the Japanese music which is composed of Nagauta, Kiyomoto, Sinnai, Tokiwazu, Gidayū, Uta-zawa, Kouta, Hauta and Zokkyoku. Another is group II of the Japanese music which is composed of the recitation of Chinese poems, Biwa, Syakuhati, Riyō, Min-yō, Kokyoku, Gagaku, Koto, Samisen, new Japanese music and recitation of Japanese poems.

There are a few items which act as connections between each of these four groups. First of all, Kayōkyoku has a close connection with a group of show-entertainments, while on the other hand, it has connections with marching songs, people's songs, concerts of Japanese & European instruments and photo-plays. Further on, marching songs and concerts of Japanese & European instruments have connections with a few items of Japanese music, while photo-plays are related to radio dramas.

In the next place, relay broadcasts from theatres have connections with relay broadcasts from Yose among the entertainments, and with radio dramas among radio art, and with Gidayū among the Japanese music. On the other hand, this item (relay broadcasts from theatres) has a close relation with stage drama for broadcasting.

Besides these items, there are a pair of items "Nō" and "Kyōgen", which have comparatively close relations with the group of entertainments.

There is a group of European music which is quite isolated from the above-mentioned three groups. This group of European music is divided into two groups; the first one is a group of serious music which has orchestral music as the focus, and includes such items as chamber music, violin, cello, piano, organ, flute, clarinet, wind instruments, chorus, vocal solo and opera. The second is a group of light music which consists of accordion, mandolin, guitar, harmonica, percussion instruments and jazz.

Between these two groups lie record music and talkie music.

Besides these two, there are two other items (girls' opera and revue) which have comparatively close connections with opera and light music.

(Received 7. V, 1940)

Table 3 The Table of Degrees of Affinity

[illegible]

¹ Hauta (A little song), Zokkyoku (A popular song of old days)

² Wayō-Gassyō (A concert of Japanese and Western instruments)

³ Mandan (A radio chat), Modan Kobanasi (A modernized comic story telling)

⁴ Kowairo (Impersonations of stage actors), Monomane (A Mimicry)

⁵ Yose-tyūkei (A relay broadcast from Yose a kind of vaudeville)

⁶ News-engei (Entertaining performances based on recent happenings in the world)

⁷ Monogatari (a radio story), Meisaku-rōdoku (Recitation of literary masterpieces)

Fig. 1 The Diagram of Relations of Affinity

